

MONTANA FISH AND GAME DEPARTMENT  
FISHERIES DIVISION  
HELENA, MONTANA

JOB COMPLETION REPORT  
RESEARCH PROJECT SEGMENT

State of Montana Name Fishery Investigation Laboratory  
Project No. F-23-R-7 Title Age and Growth Studies and  
Job No. I & II Analysis of Bottom Samples  
in Connection with Pollution  
Studies  
Period Covered July 1, 1963 to June 30, 1964

Abstract:

Over 6,000 scales were processed in the laboratory during the report period. Age and growth information from 21 individual waters are included in this report. No benthos work was done during the year.

Recommendations:

It is recommended that this project be terminated as a Federal Aid project. However, the compilation of statewide age and growth fish statistics will be supported under a state project.

Objectives:

In formulating a sound fisheries management program it is necessary to know the growth rates and age composition of fish populations throughout the state. This laboratory provides facilities for processing scale samples; determining age and growth rates from the scales; and maintaining files for the age and growth information. Periodically, the laboratory will compile an up-to-date summary of all the age and growth statistics so that management personnel will have a historical perspective to make biological judgements.

Techniques and Findings:

During 1963-64, 6,287 scales were received and mounted in the laboratory. The information from the scale envelopes was tabulated on data sheets. The mounted scales and data sheets were sent to the biologist who made the collection. After the scales are aged and calculated total lengths shown for each annulus, this information is returned to the laboratory age and growth file.

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TABLE I (continued)

|                               |      | Cutthroat Trout, <u>Salmo clarki</u>  |      |      |      |      |      |     |      |    |   |
|-------------------------------|------|---------------------------------------|------|------|------|------|------|-----|------|----|---|
| Year Collected                |      | I                                     | II   | III  | IV   | V    | VI   | VII | VIII | IX | X |
| BEAVERHEAD DRAINAGE (Lakes)   |      |                                       |      |      |      |      |      |     |      |    |   |
| Elk Lake                      | 1963 | 3.6                                   | 6.2  | 10.5 | 14.2 | 16.8 | 18.9 |     |      |    |   |
| 1-8720-3                      |      | (1)                                   | (1)  | (1)  | (1)  | (1)  | (1)  |     |      |    |   |
| MADISON DRAINAGE (Lakes)      |      |                                       |      |      |      |      |      |     |      |    |   |
| Lake Cameron                  | 1963 | 3.2                                   | 6.8  | 9.4  |      |      |      |     |      |    |   |
| 13-7160-                      |      | (19)                                  | (19) | (19) |      |      |      |     |      |    |   |
| Finger Lake                   | 1963 | 3.5                                   | 7.7  | 10.4 |      |      |      |     |      |    |   |
| 13-7620-                      |      | (10)                                  | (9)  | (3)  |      |      |      |     |      |    |   |
|                               |      | Rainbow Trout, <u>Salmo gairdneri</u> |      |      |      |      |      |     |      |    |   |
| BEAVERHEAD DRAINAGE (Streams) |      |                                       |      |      |      |      |      |     |      |    |   |
| Blacktail Creek               | 1963 | 2.7                                   | 6.6  | 9.9  | 11.9 |      |      |     |      |    |   |
| 1-720-1                       |      | (45)                                  | (20) | (13) | (4)  |      |      |     |      |    |   |
| Red Rock River                | 1963 | 3.3                                   | 9.9  | 13.4 | 17.0 |      |      |     |      |    |   |
| 1-6140-1                      |      | (10)                                  | (8)  | (6)  | (1)  |      |      |     |      |    |   |
| Horse Prairie Creek           | 1963 | 2.7                                   | 6.6  | 9.9  |      |      |      |     |      |    |   |
| 1-3500-1                      |      | (11)                                  | (2)  | (1)  |      |      |      |     |      |    |   |
| BIG HOLE DRAINAGE (Lakes)     |      |                                       |      |      |      |      |      |     |      |    |   |
| Browne's Lake                 | 1963 | 3.0                                   | 7.1  | 9.2  |      |      |      |     |      |    |   |
| 2-7525-3                      |      | (13)                                  | (10) | (5)  |      |      |      |     |      |    |   |
| GALLATIN DRAINAGE (Streams)   |      |                                       |      |      |      |      |      |     |      |    |   |
| Spring Creek                  | 1962 | 3.2                                   | 7.2  | 11.4 |      |      |      |     |      |    |   |
| 9-5700-1                      |      | (52)                                  | (21) | (8)  |      |      |      |     |      |    |   |
| Jackson Creek (Rocky Creek)   | 1963 | 3.2                                   | 6.5  | 9.7  |      |      |      |     |      |    |   |
| 9-2622-1                      |      | (46)                                  | (5)  | (2)  |      |      |      |     |      |    |   |



TABLE I (continued)

|   |      | Brown Trout, <u>Salmo trutta</u> |      |      |      |      |      |     |      |    |   |
|---|------|----------------------------------|------|------|------|------|------|-----|------|----|---|
| Year Collected                            |      | I                                | II   | III  | IV   | V    | VI   | VII | VIII | IX | X |
| GALLATIN DRAINAGE<br>(Streams)            |      |                                  |      |      |      |      |      |     |      |    |   |
| Spring Creek                              | 1962 | 4.4                              | 10.6 | 13.3 | 15.9 | 20.3 | 20.6 |     |      |    |   |
| 9-5700-1                                  |      | (79)                             | (49) | (24) | (6)  | (2)  | (1)  |     |      |    |   |
| MISSOURI DRAINAGE<br>(Streams)            |      |                                  |      |      |      |      |      |     |      |    |   |
| Prickly Pear Creek                        | 1962 | 3.0                              | 7.1  | 11.7 | 14.6 | 16.5 |      |     |      |    |   |
| 17-6016-1                                 |      | (81)                             | (34) | (18) | (7)  | (5)  |      |     |      |    |   |
| Prickly Pear Creek                        | 1963 | 3.1                              | 7.7  | 11.3 | 13.4 | 16.3 |      |     |      |    |   |
| 17-6016-1                                 |      | (94)                             | (42) | (16) | (12) | (2)  |      |     |      |    |   |
| YELLOWSTONE DRAINAGE<br>(Streams)         |      |                                  |      |      |      |      |      |     |      |    |   |
| Sheilds River                             | 1963 | 2.7                              | 6.2  | 10.1 | 13.4 | 14.4 |      |     |      |    |   |
| 22-5362-1                                 |      | (46)                             | (40) | (15) | (7)  | (3)  |      |     |      |    |   |
| Brook Trout, <u>Salvelinus fontinalis</u> |      |                                  |      |      |      |      |      |     |      |    |   |
| BEAVERHEAD DRAINAGE<br>(Lake)             |      |                                  |      |      |      |      |      |     |      |    |   |
| Lower Branham Lake                        | 1963 | 2.8                              | 5.9  | 8.5  |      |      |      |     |      |    |   |
| 1-8540-3                                  |      | (25)                             | (21) | (2)  |      |      |      |     |      |    |   |
| Reservoir Lake                            | 1963 | 3.6                              | 6.2  | 8.4  |      |      |      |     |      |    |   |
| 1-9380-5                                  |      | (24)                             | (19) | (2)  |      |      |      |     |      |    |   |
| Upper Branham Lake                        | 1963 | 3.1                              | 5.9  | 8.4  | 9.6  |      |      |     |      |    |   |
| 1-8540-3                                  |      | (13)                             | (12) | (5)  | (2)  |      |      |     |      |    |   |
| GALLATIN DRAINAGE<br>(Streams)            |      |                                  |      |      |      |      |      |     |      |    |   |
| Spring Creek                              | 1963 | 4.0                              | 7.4  |      |      |      |      |     |      |    |   |
| 9-5700-1                                  |      | (65)                             | (14) |      |      |      |      |     |      |    |   |
| BIG HOLE DRAINAGE<br>(Lakes)              |      |                                  |      |      |      |      |      |     |      |    |   |
| Browne's Lake                             | 1963 | 2.8                              | 5.5  | 7.6  |      |      |      |     |      |    |   |
| 2-7525-3                                  |      | (26)                             | (26) | (8)  |      |      |      |     |      |    |   |

Lake Trout, *Salvelinus namaycush* - continued

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Longnose Sucker, Catostomus catostomus

| BEAVERHEAD DRAINAGE<br>(Streams)   |      |             |             |             |              |             |             |             |             |             |             |
|------------------------------------|------|-------------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Grasshopper<br>Creek<br>1-3100-1   | 1963 | 2.5<br>(55) | 5.0<br>(26) | 7.5<br>(14) | 10.0<br>(10) | 11.2<br>(4) | 12.4<br>(3) |             |             |             |             |
| MISSOURI DRAINAGE<br>(Streams)     |      |             |             |             |              |             |             |             |             |             |             |
| Prickly Pear<br>Creek<br>17-6016-1 | 1962 | 1.1<br>(14) | 2.7<br>(10) | 4.9<br>(8)  | 8.1<br>(6)   | 10.1<br>(4) | 11.5<br>(3) | 12.9<br>(3) | 13.5<br>(1) | 14.9<br>(1) | 15.5<br>(1) |
| Prickly Pear<br>Creek<br>17-6016-1 | 1963 | 1.0<br>(6)  | 3.0<br>(4)  | 6.2<br>(1)  |              |             |             |             |             |             |             |